Claims

1. A composition of matter comprising

a compound having the general structural formula:

$$Ar_1\text{-}X\text{-}Ar_2$$

wherein Ar_2 is an aryl group or a heteroaryl group, wherein the heteroaryl is a ring having 5, 6, or 7 atoms, and wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, and an oxygen atom, and which is substituted with R_1, R_2, R_3, R_4, and R_5;

wherein Ar_1 is an aryl group or a heteroaryl group,wherein the heteroaryl is a ring having 5, 6, or 7 atoms, and wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, and an oxygen atom, and which is substituted with R_6, R_7, R_8, R_9, and R_{10};

wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -NH-CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -NH-CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH_2)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each

independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

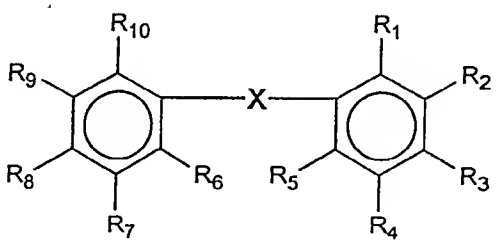
wherein X is a group having the following formula;

$$-(CH_2)_m-Y-(CH_2)_n-$$

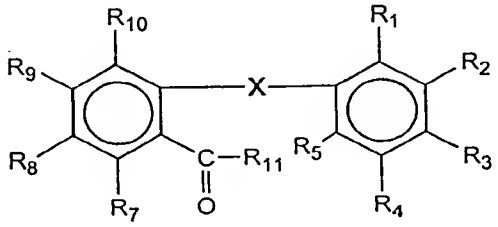
wherein Y is selcted from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

2. The composition of claim 1, wherein the compound has the general structural formula:



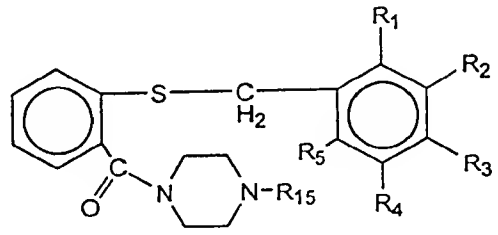
3. The composition of claim 1, wherein the compound has the general structural formula:



wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2$N R_{15}•$(CH_2)_2$, -R', -OR', -SR', -NO_2, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$.

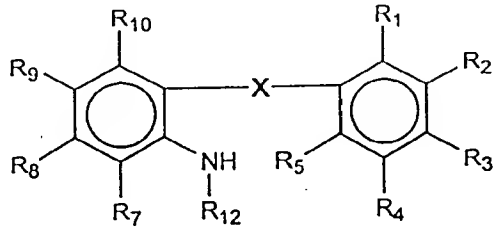
4. The composition of claim 3, wherein R_{11} is selected from the group consisting of -$NH\text{-}CH_2CH_2NH_2$ and -$NH\text{-}CH_2CH_2N\text{-}(CH_2)_z\text{-}H$ and wherein Y is S, m is 0 and n is 1-4.

5. The composition of claim 3, wherein the compound has the general structural formula:



wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

6. The composition of claim 1, wherein the compound has the general structural formula:



wherein R_{12} is selected from the group consisting of -$CO\text{-}NH\text{-}CH_2CH_2NH_2$, -$CO\text{-}NH\text{-}CH_2CH_2N\text{-}(CH_2)_z\text{-}H$, and -CO -N•$(CH_2)_2N\ R_{15}\text{•}(CH_2)_2$.

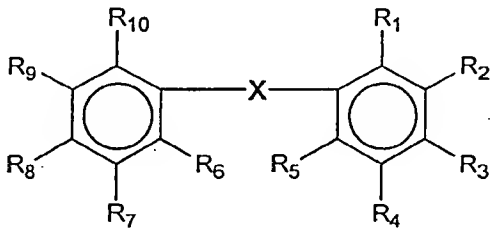
7. The composition of claim 6, wherein Y is S, m is 0 and n is 1-4.

8. The composition of claim 1, wherein m is 0 and n is 1-4.

9. The composition of claim 8, wherein Y is S, wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10}, are H, and wherein R_6 is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$ and substituted or unsubstituted -CO-piperazine, the substituents selected from the group consisting of -H, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

10. A pharmaceutical composition, comprising:

a pharmaceutically acceptable carrier and a compound in an amount effective to inhibit calcium channels, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -NH-CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -NH-CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH_2)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20})

aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

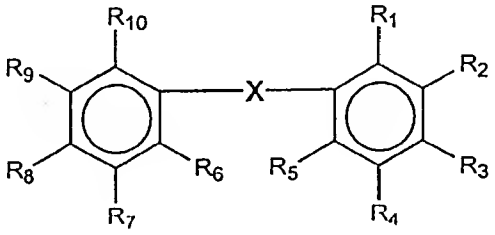
wherein X is a group having the following formula;

$$-(CH_2)_m-Y-(CH_2)_n-$$

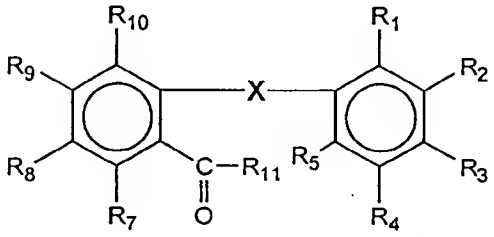
wherein Y is selected from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

11. The composition of claim 10, wherein the compound has the general structural formula:



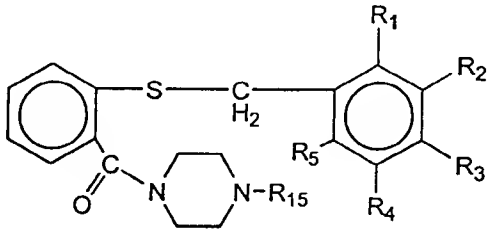
12. The composition of claim 10, wherein the compound has the general structural formula:



wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2N$ R_{15}.$(CH_2)_2$, -R', -OR', -SR', -NO_2, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$.

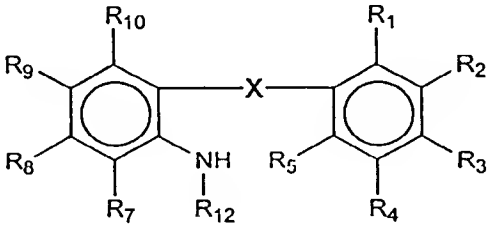
13. The composition of claim 12, wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$ and -NH-CH_2CH_2N-$(CH_2)_z$-H and wherein Y is S, m is 0 and n is 1-4.

14. The composition of claim 13, wherein the compound has the general structural formula:



wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

15. The composition of claim 10, wherein the compound has the general structural formula:



wherein R_{12} is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$, -CO-NH-CH_2CH_2N-$(CH_2)_z$-H, and -CO -N•$(CH_2)_2N$ R_{15}•$(CH_2)_2$.

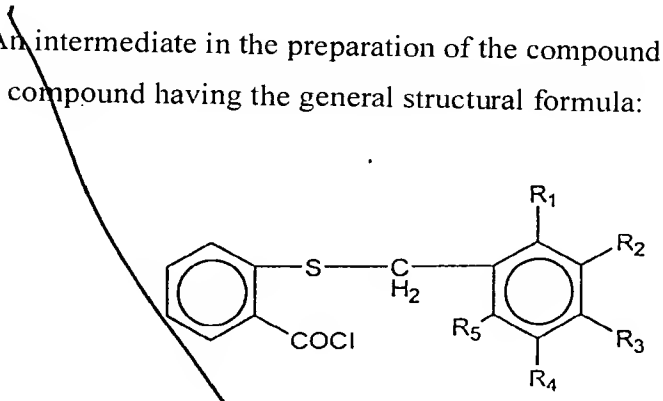
16. The composition of claims 10-15, further comprising a medicament for the treatment of cardiovascular disease other than the compound.

17. The composition of claim 16, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of hypertension.

18. The composition of claim 16, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of congestive heart failure.

19. The composition of claim 16, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of angina.

20. An intermediate in the preparation of the compound of claim 1 comprising: a compound having the general structural formula:

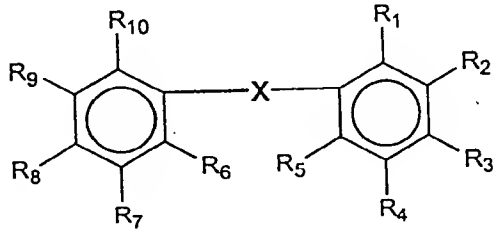


wherein R_1, R_2, R_3, R_4, and R_5, independent of one another, are selected from the group consisting of hydrogen, halogen, nitro, alkyl, alkoxy or piperonyl.

21. A method for inhibiting calcium channel activity in a cell having a calcium channel comprising:

contacting the cell having the calcium channel with a compound in an amount effective to inhibit calcium channels,

wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-(CH_2)$_{2-5}$$NH_2$, -CO-NH-($CH_2$)$_{2-5}$NH-($CH_2$)$_z$-H, -CO-NH($CH_2$)$_{2-5}$$NR_{15}$($CH_2$)$_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH_2)$_{2-5}$$NH_2$, -NH-CO-NH-($CH_2$)$_{2-5}$NH-($CH_2$)$_z$-H, -NH-CO-NH($CH_2$)$_{2-5}$$NR_{15}$($CH_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH_2)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

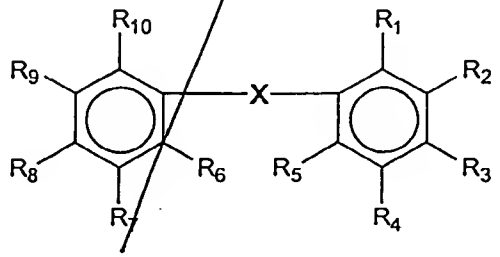
wherein X is a group having the following formula;

$$-(CH_2)_m-Y-(CH_2)_n-$$

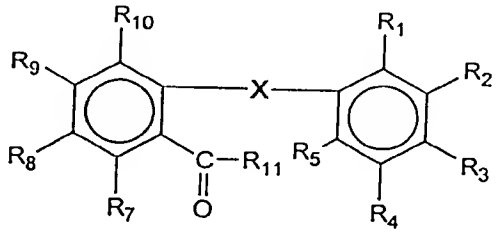
wherein Y is selected from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

22. The method of claim 21, wherein the compound has the general structural formula:



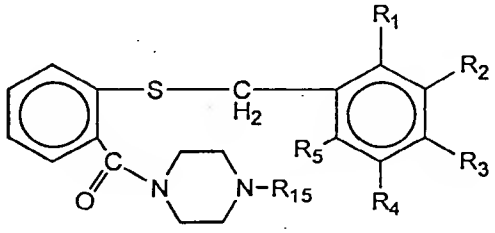
23. The method of claim 21, wherein the compound has the general structural formula:



wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2$N R_{15}.$(CH_2)_2$, -R', -OR', -SR', -NO_2, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$.

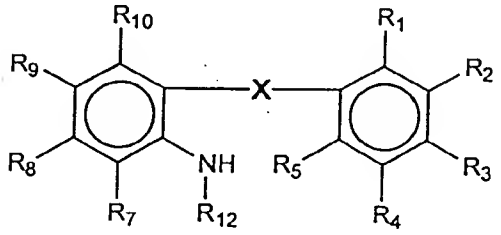
24. The method of claim 23, wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$ and -NH-CH_2CH_2N-$(CH_2)_z$-H and wherein Y is S, m is 0 and n is 1-4.

25. The method of claim 24, wherein the compound has the general structural formula:



wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

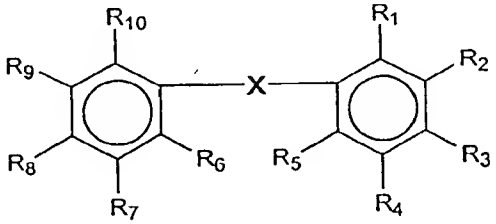
26. The method of claim 21, wherein the compound has the general structural formula:



wherein R_{12} is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$, -CO-NH-CH_2CH_2N-$(CH_2)_z$-H, and -CO -N•$(CH_2)_2N$ R_{15}-$(CH_2)_2$.

27. A method of treating a subject having a disorder associated with calcium channel activity comprising:

administering to the subject having the disorder associated with calcium channel activity a compound in an amount effective to inhibit calcium channels in the subject and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -

C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-$(CH_2)_{2-5}NH_2$, -CO-NH-$(CH_2)_{2-5}$NH-$(CH_2)_z$-H, -CO-NH$(CH_2)_{2-5}NR_{15}(CH_2)_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-$(CH_2)_{2-5}NH_2$, -NH-CO-NH-$(CH_2)_{2-5}$NH-$(CH_2)_z$-H, -NH-CO-NH$(CH_2)_{2-5}NR_{15}(CH_2)_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is $(CH_2)_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

$$-(CH_2)_m-Y-(CH_2)_n-$$

wherein Y is selected from the group consisting of S, N, and O; and

wherein m and n, independent of one another, are integers of 0-5.

28. The method of claim 27, wherein the disorder associated with calcium channel activity is a cardiovascular disease.

29. The method of claim 28, wherein the cardiovascular disease is selected form the group consisting of hypertension, congestive heart failure, arrhythmia, and angina.

30. The method of claim 27, wherein the disorder associated with calcium channel activity is asthma.

31. The method of claim 27, wherein the disorder associated with calcium channel activity is a migraine disorder.

32. The method of claims 27-31, wherein the administration is per oral.

33. The method of claims 27-31, wherein the administration is parenteral.

34. The method of claims 27-31, wherein the administration is intravenous.

35. The method of claims 27-29, further comprising administering a medicament other than the compound for the treatment of cardiovascular disease.

36. The method of claim 35, wherein the medicament is for treating hypertension.

37. The method of claim 36, wherein the medicament is selected from the group consisting of Ajmaline; γ-Aminobutyric acid; Alfuzosin Hydrochloride; Alipamide; Althiazide; Amiquinsin Hydrochloride; Amlodipine Besylate ; Amlodipine Maleate; Amosulalol; Anaritide Acetate; Aryloxypropanolamine derivatives; Atiprosin Maleate; Belfosdil; Bemitradine; Bendacalol Mesylate; Bendroflumethiazide; Benzothiadiazine derivatives; Benzthiazide ; Betaxolol Hydrochloride ; Bethanidine Sulfate; Bevantolol Hydrochloride ; Biclodil Hydrochloride; Bisoprolol; Bisoprolol Fumarate; Bucindolol Hydrochloride; Bupicomide; Bufeniode; Bufuralol; Buthiazide: Candoxatril; Candoxatrilat; Captopril ; N-Carboxyalkyl derivatives; Carvedilol ; Ceronapril; Chlorothiazide Sodium; Chlorthalidone; Cicletanine; Ciclasidomine; Cilazapril; Clonidine; Clonidine Hydrochloride; Clopamide ; Cyclopenthiazide; Cyclothiazide; Cyptenamine tannates; Darodipine ; Debrisoquin Sulfate; Delapril Hydrochloride; Diapamide ; Diazoxide; Dilevalol Hydrochloride ; Diltiazem Malate; Ditekiren; Doxazosin Mesylate; Ecadotril; Enalapril Maleate; Enalaprilat; Enalkiren; Endralazine Mesylate; Epithiazide ; Eprosartan; Eprosartan Mesylate; Fenoldopam Mesylate ; Flavodilol Maleate; Flordipine; Flosequinan; Fosinopril Sodium ; Fosinoprilat; Guanabenz; Guanabenz

Acetate; Guanacline Sulfate; Guanadrel Sulfate; Guanazodine; Guancydine; Guanethidine Monosulfate; Guanethidine Sulfate; Guanfacine Hydrochloride; Guanisoquin Sulfate; Guanoclor Sulfate; Guanoctine Hydrochloride; Guanoxabenz; Guanoxan Sulfate; Guanoxyfen Sulfate ; Hydralazine Hydrochloride; Hydrazines and phthalazines; Hydralazine Polistirex; Hydroflumethiazide ; Imidazole derivatives; Indacrinone ; Indapamide ; Indolapril Hydrochloride; Indoramin; Indoramin Hydrochloride; Indorenate Hydrochloride; Ketanserin; Labetalol; Lacidipine; Leniquinsin; Levcromakalim ; Lisinopril; Lofexidine Hydrochloride; Losartan Potassium; Losulazine Hydrochloride; Mebutamate; Mecamylamine Hydrochloride; Medroxalol; Medroxalol Hydrochloride; Methalthiazide ; Methyclothiazide ; Methyldopa; Methyldopate Hydrochloride; Methyl 4 pyridyl ketone thiosemicarbarzone; Metipranolol; Metolazone ; Metoprolol Fumarate; Metoprolol Succinate ; Metyrosine; Minoxidil ; Monatepil Maleate ; Muzolimine ; Nebivolol; Nitrendipine; Ofornine; Pargyline Hydrochloride; Pazoxide; Pelanserin Hydrochloride ; Perindopril Erbumine; Pempidine; Piperoxan; primaperone; Protoveratrines; Raubasine; Rescimetol; Rilemenidene; Pronethalol; Phenoxybenzamine Hydrochloride; Pinacidil; Pivopril; Polythiazide ; Prazosin Hydrochloride; Primidolol ; Prizidilol Hydrochloride; Quaternary Ammonium Compounds; Quinazoline derivatives; Quinapril Hydrochloride ; Quinaprilat ; Quinazosin Hydrochloride; Quinelorane Hydrochloride ; Quinpirole Hydrochloride; Quinuclium Bromide; Ramipril ; Rauwolfia Serpentina; Reserpine; Saprisartan Potassium; Saralasin Acetate; Sodium Nitroprusside; Sotalol; Sulfinalol Hydrochloride; Sulfonamide derivatives; Tasosartan; Teludipine Hydrochloride ; Temocapril Hydrochloride; Terazosin Hydrochloride; Terlakiren; Tiamenidine; Tiamenidine Hydrochloride; Ticrynafen ; Tinabinol; Tiodazosin; Tipentosin Hydrochloride; Trichlormethiazide ; Trimazosin Hydrochloride; Trimethaphan Camsylate; Trimoxamine Hydrochloride; Tripamide; Tyrosinase; Urapidil; Xipamide; Zankiren Hydrochloride; and Zofenoprilat Arginine.

38. The method of claim 35, wherein the medicament is for treating congestive heart failure.

39. The method of claim 38, wherein the medicament is selected from the group consisting of thiazide diuretics, metolazone, furosemide, bumetanide, ethacrynic acid, aldosterone antagonists, trimterene, and amiloride.

40. The method of claim 35, wherein the medicament is for treating angina.

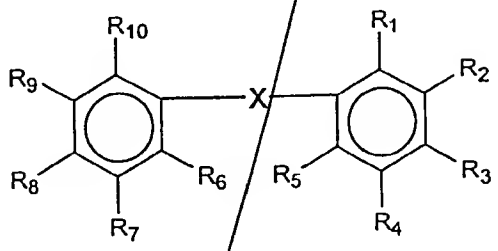
41. The method of claim 40, wherein the medicament is selected from the group consisting of Acebutolol, Alprenolol. Amiodarone, Arotinolol, Atenolol, Bepridil, Bucumolol, Bufetolol, Bufuralol, Bunitrolol, Bupranolol, Carozolol, Carteolol, Celiprolol, Cinepazet Maleate, Diltiazem, Espanolol, Felodipine, Gallopamil, Imolamine, Indenolol, Isosorbide Dinitrate, Isadipine, Limaprost, Mepindolol, Molsidomine, Nadolol, Nicardipine, Nifedipine, Nifenalol, Nilvadipine, Nipradilol, Nisoldipine, Nitroglycerin, Oxprenolol, Oxyfedrine, Ozagrel, Penbutoolol, Pentaerythritol, Tetranitrate, Pindolol, Pronethalol, Propranolol, Sotaiol, Terodiline, Timolol, Toliprolol; Amlodipine Besylate; Amlodipine Maleate; Betaxolol Hydrochloride; Bevantolol Hydrochloride; Butoprozine Hydrochloride; Carvedilol ; Cinepazet Maleate; Metoprolol Succinate; Molsidomine; Monatepil Maleate; Primidolol ; Ranolazine Hydrochloride; Tosifen; Verapamil Hydrochloride; and Tirofiban Hydrochloride.

42. The method of claim 35, wherein the medicament is for treating arrhythmia.

43. The method of claim 42, wherein the medicament is selected from the group consisting of sodium channel blockers such as quinidine, procainamide, disopyramide, moricizine, lidocaine, mexiletine, phenytoin, tocainide, encainide, flecainide, propafenone, indecainide; b-adrenergic blockers, such as propranolol, acebutolol, esmolol; and compounds that prolong repolarization, such as amiodarone, bretylium, sotalol; Acebutol, Acecaine, Adenosine, Ajmaline, Alprenolol, Amiodarone, Amoproxan, Aprindine, Arotinolol, Atenolol, Bevantolol, Bretylium Tosylate, Bubumolol, Bufetolol, Bunaftine, Bunitrolol, Bupranolol, Butidrine Hydrochloride, Butobendine, Capobenic Acid, Carazolol, Carteolol, Cifenline, Cloranolol, Gallopamil, Indenolol, Ipratropium Bromide, Lorajmine, Lorcainide, Meobentine, Metipranolol, Mexiletine, Nifenalol, Oxprenolol, Penbutolol, Pindolol, Pirmenol, Practolol, Prajmaline, Pronthalol, Pyrinoline, Quinidine Sulfate, Quinidine, Sotalol, Talinolol, Timolol, Tocainide, Verapamil, Viquidil and Xibenolol.

44. A kit comprising:

- a package housing a container containing a compound in an amount effective to inhibit calcium channels and a pharmaceutically acceptable carrier, wherein the compound has the general structural formula:



wherein R_1, R_2, R_3, R_4, R_5, R_7, R_8, R_9, and R_{10} independent of one another, are selected from the group consisting of -H, halogen, piperonyl, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, (C_1-C_6) alkoxy -CN, -OR', -SR', -NO_2, -NR'R', amino acid, -C(O)R', -C(S)R', -C(O)OR', -C(S)OR', -C(O)SR, -C(S)SR', -C(O)N(R')$_2$, -C(O)C(O)R', -C(S)C(O)R', -C(O)C(S)R', -C(S)C(S)R', -C(O)C(O)OR', -C(S)C(O)OR', -C(O)C(S)OR', -C(O)C(O)SR', -C(S)C(S)OR', -C(S)C(O)SR', -C(O)C(S)SR', -C(S)C(S)SR', -C(O)C(O)N(R')$_2$, -C(S)C(O)N(R')$_2$, -C(O)C(S)N(R')$_2$, or -C(S)C(S)N(R')$_2$;

wherein R_6 is in the ortho position and is selected from the group consisting of -CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -CO-R', -CO-OR', -CO-SR', -CO-N(R')$_2$, -CO-CO-R', -CO-CS-R', -CO-CO-OR', -CO-CS-OR', -CO-CO-SR', -CO-CS-SR', -CO-CO-N(R')$_2$, -CO-CS-N(R')$_2$, -NH-CO-NH-(CH_2)$_{2\text{-}5}$$NH_2$, -NH-CO-NH-($CH_2$)$_{2\text{-}5}$NH-($CH_2$)$_z$-H, -NH-CO-NH($CH_2$)$_{2\text{-}5}$$NR_{15}$($CH_2$)$_z$-H, -NH-CO-R', -NH-CO-OR', -NH-CO-SR', -NH-CO-NO_2, -NH-CO-N(R')$_2$, -NH-CO-CO-R', -NH-CO-CS-R', -NH-CO-CO-OR', -NH-CO-CS-OR', -NH-CO-CO-SR', -NH-CO-CS-SR', -NH-CO-CO-N(R')$_2$, and -NH-CO-CS-N(R')$_2$,

wherein each R' is (CH_2)$_z$ -NR"R" and wherein R" is independently selected from the group consisting of (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkoxy, (C_1-C_6) alkynyl, (C_6-C_{20}) aryl, (C_6-C_{20}) substituted aryl, (C_6-C_{26}) alkaryl, substituted (C_6-C_{26}) alkaryl, and (C_5-C_7) heteroaryl wherein at least one atom of the heteroaryl is selected from the group consisting of a sulfur, a nitrogen, or an oxygen atom, wherein the aryl and alkaryl substituents are each independently selected from the group consisting of hydrogen, halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl and trihalomethyl;

wherein z is 1-6;

wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy;

wherein X is a group having the following formula;

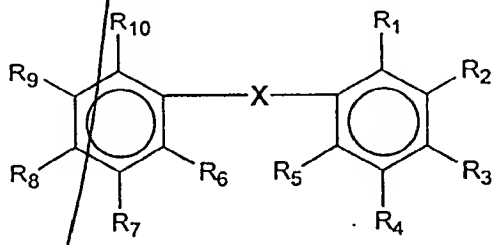
$$-(CH_2)_m-Y-(CH_2)_n-$$

wherein Y is selected from the group consisting of S, N, and O;

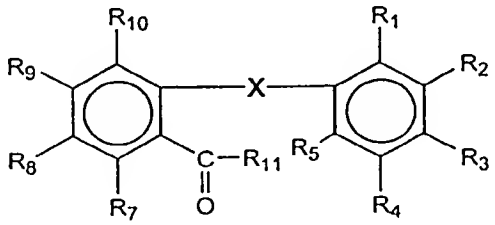
wherein m and n, independent of one another, are integers of 0-5; and,

- instructions for using the compound to treat a subject having a calcium channel blocking disorder.

45. The kit of claim 44, wherein the compound is of the general formula:



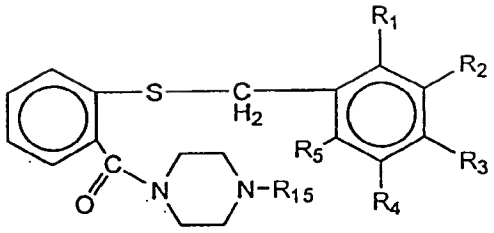
46. The kit of claim 45, wherein the compound is of the general structural formula:



wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$, -NH-CH_2CH_2N-$(CH_2)_z$-H, -N•$(CH_2)_2N$ R_{15}•$(CH_2)_2$, -R', -OR', -SR', $-NO_2$, -N(R')$_2$, -CO-R', -CS-R', -CO-OR', -CS-OR', -CO-SR', -CS-SR', -CO-N(R')$_2$, and -CS-N(R')$_2$.

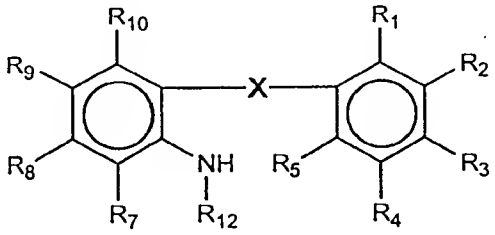
47. The kit of claim 46, wherein R_{11} is selected from the group consisting of -NH-$CH_2CH_2NH_2$ and -NH-CH_2CH_2N-$(CH_2)_z$-H and wherein Y is S, m is 0 and n is 1-4.

48. The kit of claim 46, wherein the compound has the general structural formula:



wherein R_{15} is selected from the group consisting of halogen, (C_1-C_6) alkyl, (C_1-C_6) alkenyl, (C_1-C_6) alkynyl, and (C_1-C_6) alkoxy.

49. The kit of claim 44, wherein the compound has the general structural formula:



wherein R_{12} is selected from the group consisting of -CO-NH-$CH_2CH_2NH_2$, -CO-NH-CH_2CH_2N-$(CH_2)_z$-H, and -CO -N•$(CH_2)_2$N R_{15}•$(CH_2)_2$.

50. The kit of claim 44, further comprising a second container containing a medicament other than the compound for the treatment of cardiovascular disease, and wherein the instructions are for using the compound and the medicament to treat cardiovascular disease.

51. The kit of claim 50, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of hypertension.

52. The kit of claim 50, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of congestive heart failure.

53. The kit of claim 50, wherein the medicament for the treatment of cardiovascular disease is a medicament for the treatment of angina.

54. The kit of claim 44, further comprising a second container containing a medicament for the treatment of a migraine disorder, and wherein the instructions are for using the compound and the medicament to treat the migraine disorder.